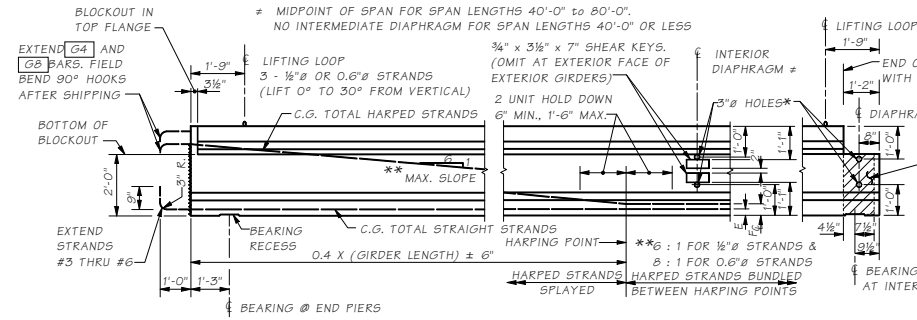
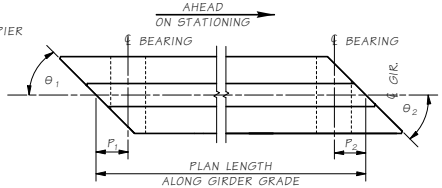


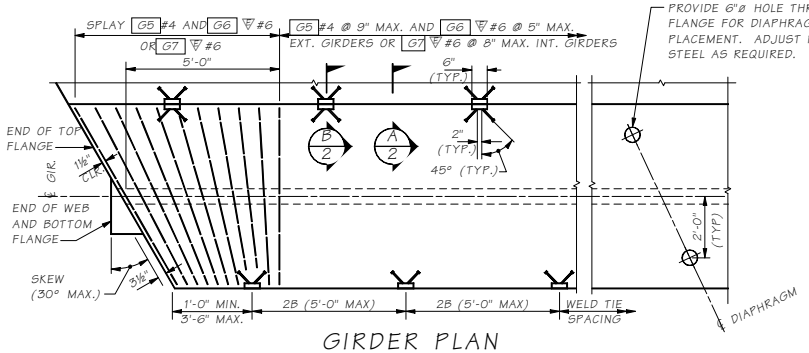
GIRDER ELEVATION

* OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1" BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4⅝") FERRULE INSERT OR APPROVED EQUAL. (TYP.)

GENERAL NOTES

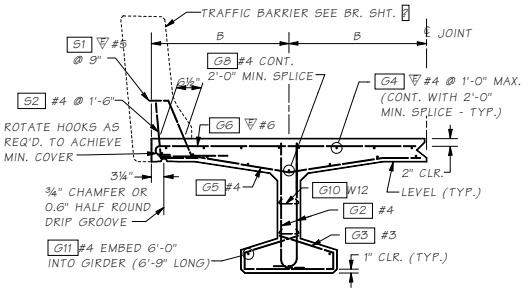
1. ALL DETAILS SHOWN PERTAIN ONLY TO THE 35 INCH DEEP GIRDER WITH THE 6'-0" GIRDER WIDTH SHOWN.
2. FORMS FOR THE BEARING PAD RECESSES SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER SO AS TO NOT CAUSE DAMAGE TO THE GIRDERS DURING THE STRAND RELEASE OPERATION.
3. SPAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE
4. ALL PRESTRESSING STRANDS SHALL BE ½ INCH OR 0.6 INCH ø LOW RELAXATION SEVEN WIRE STRAND, AASHTO M203 GR. 270. ALL MILD STEEL REINFORCING SHALL BE AASHTO M31 GR. 60. ALL STUDS SHALL CONFORM TO STD. SPEC. SECTION 9-06.15. ALL OTHER STEEL SHALL BE AASHTO M183 AND SHALL BE PAINTED WITH 2 COATS OF STATE FORMULA A-9-73.
5. CUT ALL STRANDS FLUSH WITH THE GIRDER ENDS EXCEPT FOR THOSE SHOWN TO BE EXTENDED, AND PAINT ENDS OF FLUSH STRANDS WITH AN APPROVED EPOXY RESIN.
6. AFTER ERECTION, CUT OFF LIFTING LOOPS 1 INCH BELOW THE TOP OF THE FLANGE AND FILL WITH AN APPROVED GROUT PRIOR TO PLACING OF THE OVERLAY. ALL LIFTING STRANDS ARE TO BE OF THE SAME MATERIAL AND STRENGTH AS THE PRESTRESSING STRANDS. WRAP LIFTING LOOPS SO THAT EACH STRAND WILL CARRY IT'S SHARE OF THE TOTAL LOAD. EXTEND LIFTING LOOPS WITH 9 INCH LONG 90° HOOKS TO WITHIN 3 INCHES CLEAR OF THE BOTTOM OF THE GIRDER.





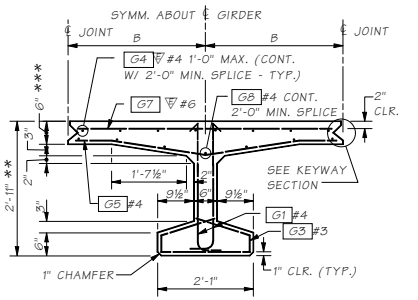
GIRDER PLAN

OMIT WELD TIES ON EXTERIOR EDGE OF EXTERIOR GIRDER. (STRANDS AND LONGITUDINAL BARS NOT SHOWN)



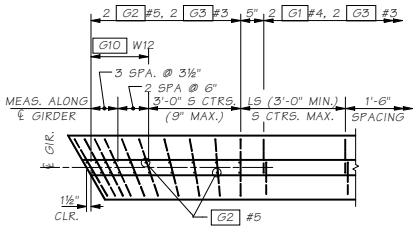
EXTERIOR GIRDER REINFORCING NEAR GIRDER END

FOR DETAILS NOT SHOWN, SEE INTERIOR GIRDER



INTERIOR GIRDER REINFORCING NEAR MIDSPAN

*** THICKEN FLANGE TO COMPENSATE FOR SUPERELEVATION.



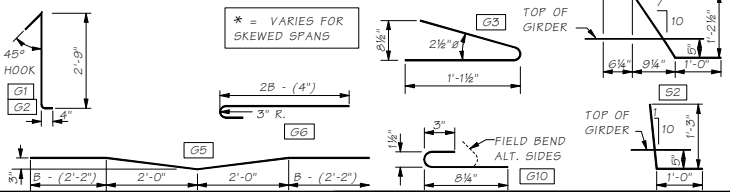
PLAN SECTION THROUGH GIRDER WEB

▽ DENOTES EPOXY COATED

△△ #3 OR #4 BARS MAY BE USED IN LIEU OF W12. FIELD BEND IS OPTIONAL.

MARK	LOCATION	SIZE
G1	GIRDER STIRRUPS	4
G2	GIRDER END STIRRUPS	5
G3	BOTTOM FLANGE	3
G4	TOP OF TOP FLANGE - LONGIT.	▽4 STR.
G5	BOT. OF TOP FLANGE - TRANSV.	4
G6	TOP TRANSV. - EXT. GIRDER	▽6
G7	TOP TRANSV. - INT. GIRDER	▽6 STR.
G8	BOT. OF TOP FLANGE - LONGIT.	4 STR.
G10	GIRDER END TIES	W12 △△
G11	GIRDER LONGIT.	6 STR.
S1	T.B. TO DECK TIE	▽5
S2	T.B. TO DECK TIE	4

BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)



Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W35DG1.man				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By					JOB NUMBER				
Checked By									
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

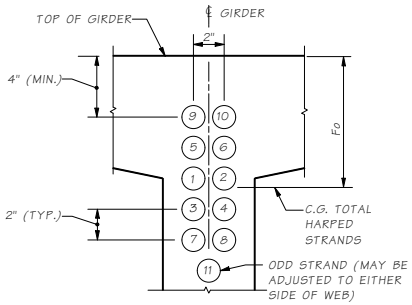
STANDARD PRESTRESSED CONCRETE GIRDERS

W35DG DECK BULB TEE GIRDER DETAILS 1 OF 2

BRIDGE SHEET NO. SHEET OF SHEETS

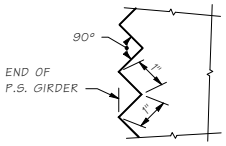
SHEET JOB NO. SR 5.6-A24-1

Tue Feb 05 09:08:28 2008



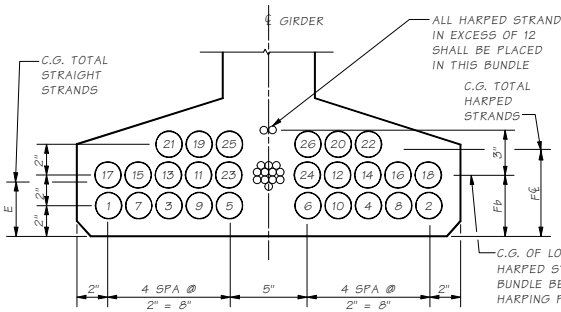
STRAND PATTERN AT GIRDER END

HARPED STRAND LOCATION SEQUENCE SHALL BE AS SHOWN (1), (2) ETC.



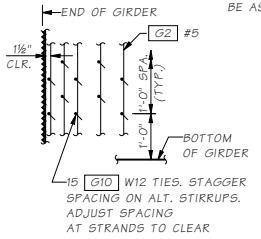
SAWTEETH DETAILS

SAWTEETH ARE FULL WIDTH - USE SAWTEETH KEYS FROM BOTTOM OF BOTTOM FLANGE TO BOTTOM OF LOWEST HARPED STRAND

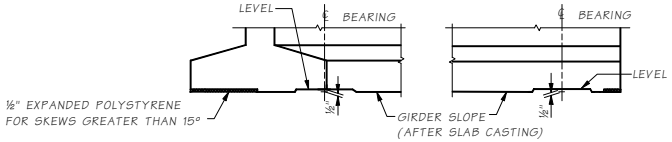


STRAND PATTERN AT ℄ SPAN

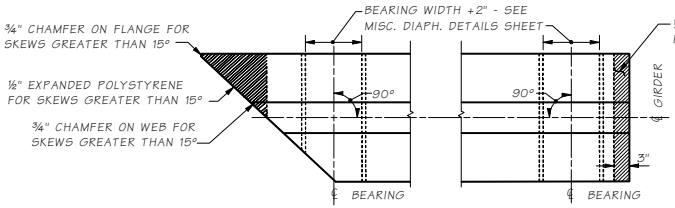
STRAND LOCATION SEQUENCE SHALL BE AS SHOWN (1), (2) ETC.



TIE SPACING DETAIL

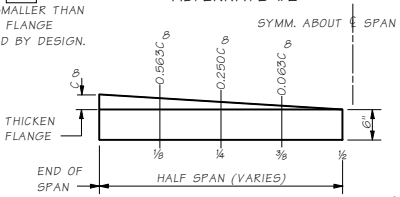


ELEVATION

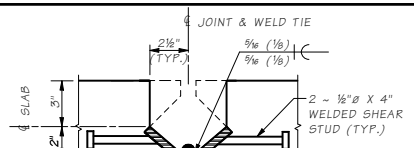


PLAN - BEARING RECESS & BOTTOM FLANGE SPALL PROTECTION

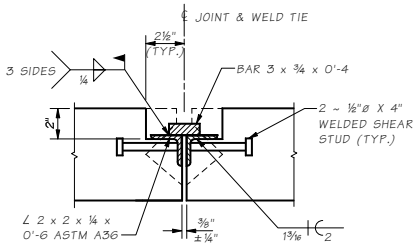
** THICKEN FLANGE TO COMPENSATE FOR CAMBER DUE TO PRESTRESS. FLANGE THICKNESS SHOWN IS @ ℄ OF SPAN. FOR FLANGE THINCKNESS ALONG GIRDER SEE GIRDER FLANGE THICKENING DETAILS ON BR. SHEET ☐ GIRDERS WITH ULTIMATE CAMBER VALUES SMALLER THAN ¾" ARE EXEMPT FROM THIS REQUIREMENT. FLANGE THICKENING SHALL BE USED ONLY IF NEEDED BY DESIGN.



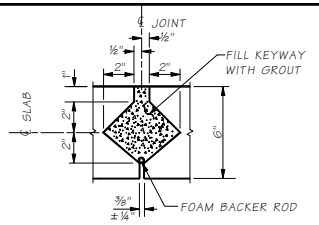
GIRDER FLANGE THICKENING**



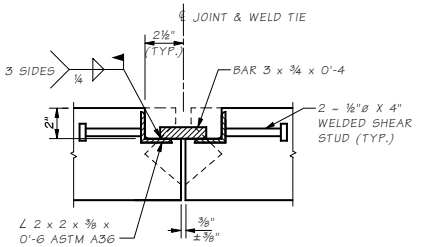
SECTION B 1
WELD TIE ALTERNATE #1



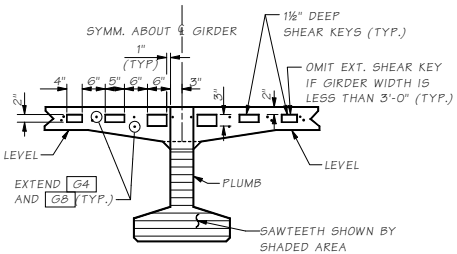
SECTION B 1
WELD TIE ALTERNATE #2



SECTION A 1
KEYWAY



SECTION B 1
WELD TIE ALTERNATE #3



GIRDER END
AT END PIERS

* The number of harped strands should not exceed ½ of the number of straight strands.

NOTE: Dimensions shall be shown in Imperial units to the nearest ⅛th inch.

GIRDER SCHEDULE

SPAN	GIRDER	END 1	END 2	S	LS	θ_1	θ_2	P_1	P_2	PLAN LENGTH (ALONG GIRDER GRADE)	MIN. CONC. COMPR. STRENGTH @ FINAL F'C KSI	MIN. CONC. COMPR. STRENGTH @ RELEASE F'CI KSI	HARPED NO. OF STRANDS	HARPED JACKING FORCE (KIPS)	STRAIGHT NO. OF STRANDS	STRAIGHT JACKING FORCE (KIPS)	LOCATION OF C.G. STRANDS E	LOCATION OF C.G. STRANDS F℄	LOCATION OF C.G. STRANDS Fb	LOCATION OF C.G. STRANDS Fo	CAMBER RELEASE △	CAMBER 30 △	CAMBER 2000 △
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W35DG2.man								
Supervisor						REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By						10	WASH.			
Checked By						JOB NUMBER				
Detailed By										
Bridge Projects Engr.										
Prelim Plan By										
Architect/Specialist	DATE	REVISION		BY	APP'D					

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Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W35DG DECK BULB TEE GIRDER DETAILS 2 OF 2

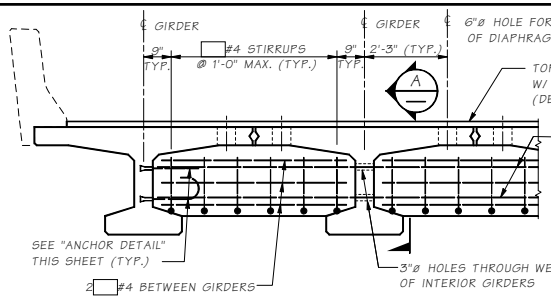
BRIDGE SHEET NO.

SHEET OF SHEETS

SHEET

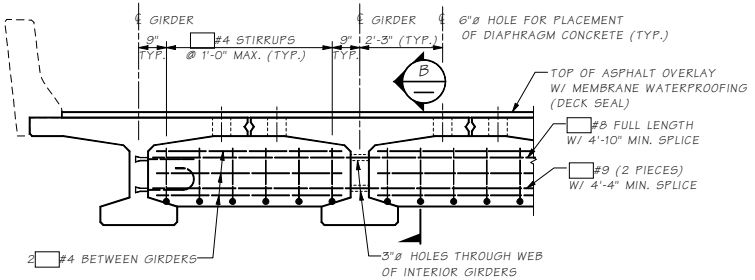
JOB NO. SR 5.6-A24-2

Tue Feb 05 09:08:34 2008



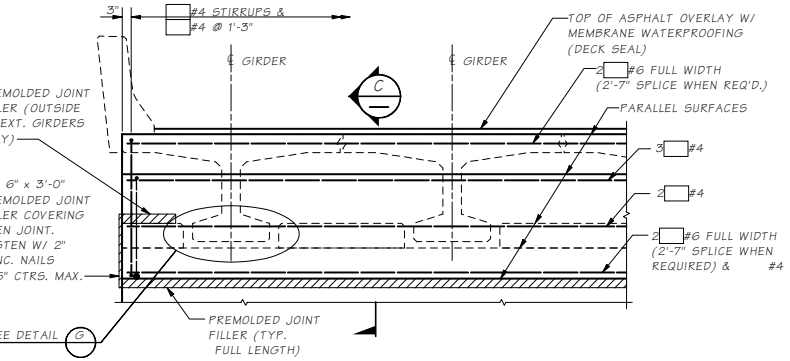
ELEVATION - TYPICAL END DIAPHRAGM AT INTERMEDIATE PIERS

CONCRETE CLASS 4000, CAST IN PLACE



ELEVATION - TYPICAL INTERMEDIATE DIAPHRAGM

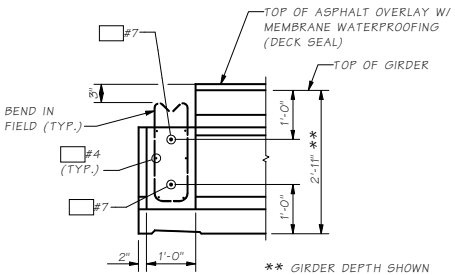
CONCRETE CLASS 4000, CAST IN PLACE



MISC. DECK BULB TEE DIAPHRAGM DETAILS SHEET

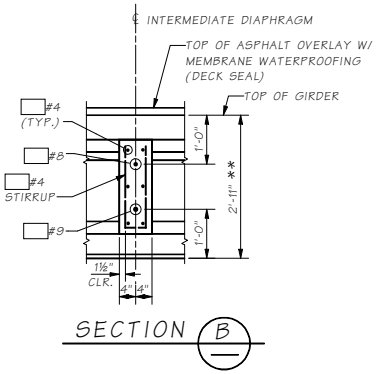
ELEVATION - TYPICAL END DIAPHRAGM AT END PIERS

CONCRETE CLASS 4000, CAST IN PLACE

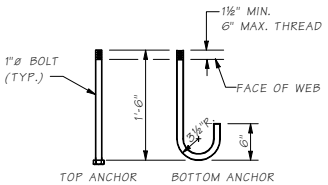


SECTION A

LONGIT. DIMENSIONS ARE NORMAL TO SKEW

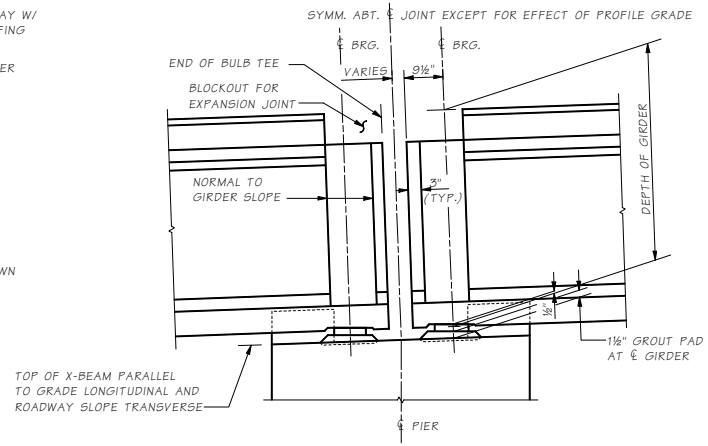


SECTION B



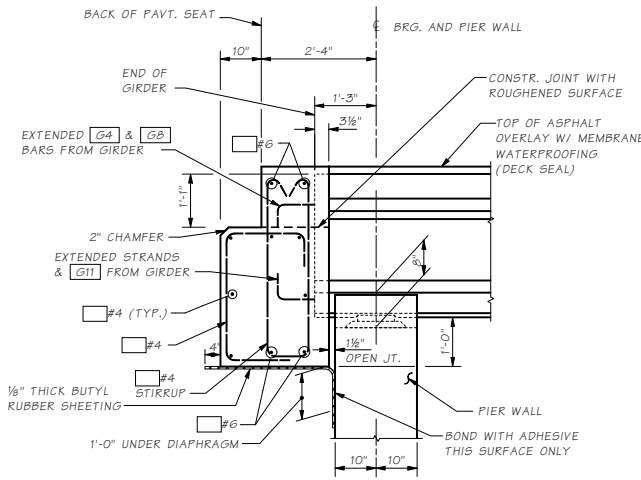
ANCHOR DETAIL

A.S.T.M. A-307



END DIAPHRAGMS AT INTERMEDIATE PIER

LONGITUDINAL DIMENSIONS ARE NORMAL TO PIER



SECTION C

ALL LONGITUDINAL DIMENSIONS SHOWN ARE NORMAL TO ℄ BRG.

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W35DG DIA.man				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By					JOB NUMBER				
Checked By									
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

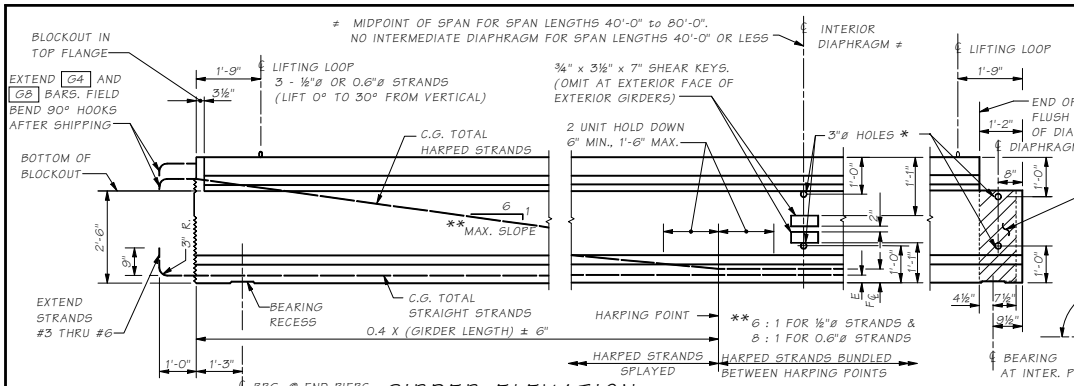
W35DG DECK BULB TEE DIAPHRAGM DETAILS

BRIDGE SHEET NO.

SHEET OF SHEETS

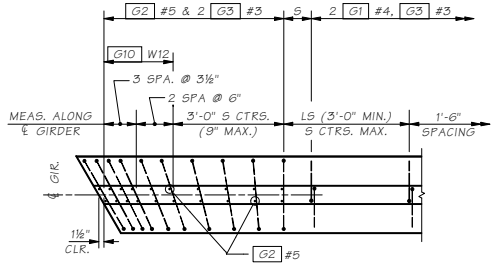
SR JOB NO. SHEET 5.6-A24-3

Tue Feb 05 09:08:40 2008

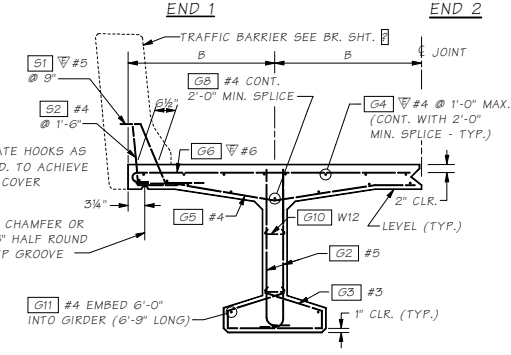


GENERAL NOTES

1. ALL DETAILS SHOWN PERTAIN ONLY TO THE 41 INCH DEEP GIRDER WITH THE 6'-0" GIRDER WIDTH SHOWN.
2. FORMS FOR THE BEARING PAD RECESSES SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER SO AS TO NOT CAUSE DAMAGE TO THE GIRDERS DURING THE STRAND RELEASE OPERATION.
3. SPAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE
4. ALL PRESTRESSING STRANDS SHALL BE ½ INCH OR 0.6 INCH ø LOW RELAXATION SEVEN WIRE STRAND, AASHTO M203 GR. 270. ALL MILD STEEL REINFORCING SHALL BE AASHTO M31 GR. 60. ALL STUDS SHALL CONFORM TO STD. SPEC. SECTION 9-06.15. ALL OTHER STEEL SHALL BE AASHTO M183 AND SHALL BE PAINTED WITH 2 COATS OF STATE FORMULA A-9-73.
5. CUT ALL STRANDS FLUSH WITH THE GIRDER ENDS EXCEPT FOR THOSE SHOWN TO BE EXTENDED, AND PAINT ENDS OF FLUSH STRANDS WITH AN APPROVED EPOXY RESIN.
6. AFTER ERECTION, CUT OFF LIFTING LOOPS 1 INCH BELOW THE TOP OF THE FLANGE AND FILLWITH AN APPROVED GROUT PRIOR TO PLACING OF THE OVERLAY. ALL LIFTING STRANDS ARE TO BE OF THE SAME MATERIAL AND STRENGTH AS THE PRESTRESSING STRANDS. WRAP LIFTING LOOPS SO THAT EACH STRAND WILL CARRY IT'S SHARE OF THE TOTAL LOAD. EXTEND LIFTING LOOPS WITH 9 INCH LONG 90° HOOKS TO WITHIN 3 INCHES CLEAR OF THE BOTTOM OF THE GIRDER.

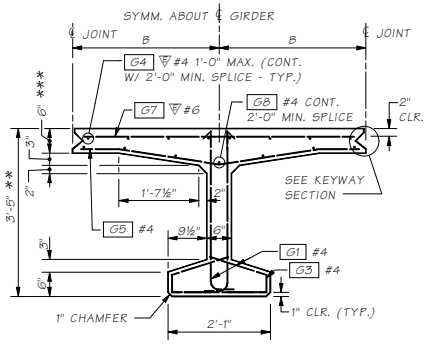


PLAN SECTION THROUGH GIRDER WEB



EXTERIOR GIRDER REINFORCING NEAR GIRDER END

FOR DETAILS NOT SHOWN, SEE INTERIOR GIRDER



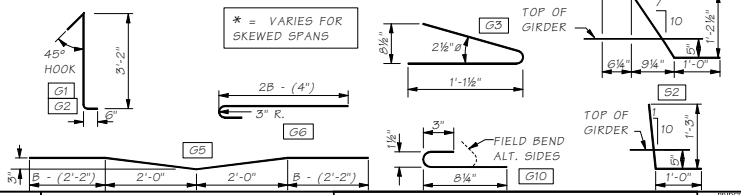
INTERIOR GIRDER REINFORCING NEAR MIDSPAN

*** THICKEN FLANGE TO COMPENSATE FOR SUPERELEVATION.

▽ DENOTES EPOXY COATED

△△ #3 OR #4 BARS MAY BE USED IN LIEU OF W12. FIELD BEND IS OPTIONAL.

MARK	LOCATION	SIZE	BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)
G1	GIRDER STIRRUPS	4	
G2	GIRDER END STIRRUPS	5	
G3	BOTTOM FLANGE	3	
G4	TOP OF TOP FLANGE - LONGIT.	▽4 STR.	
G5	BOT. OF TOP FLANGE - TRANSV.	4	
G6	TOP TRANSV. - EXT. GIRDER	▽6	
G7	TOP TRANSV. - INT. GIRDER	▽6 STR.	
G8	BOT. OF TOP FLANGE - LONGIT.	4 STR.	
G10	GIRDER END TIES	W12 △△	
G11	GIRDER LONGIT.	6 STR.	
S1	T.B. TO DECK TIE	▽5	
S2	T.B. TO DECK TIE	4	



Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W41DG1.man			REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor				10	WASH.			
Designed By				JOB NUMBER				
Checked By								
Detailed By								
Bridge Projects Engr.								
Prelim Plan By								
Architect/Specialist	DATE	REVISION	BY	APP'D				

Tue Feb 05 09:08:47 2008

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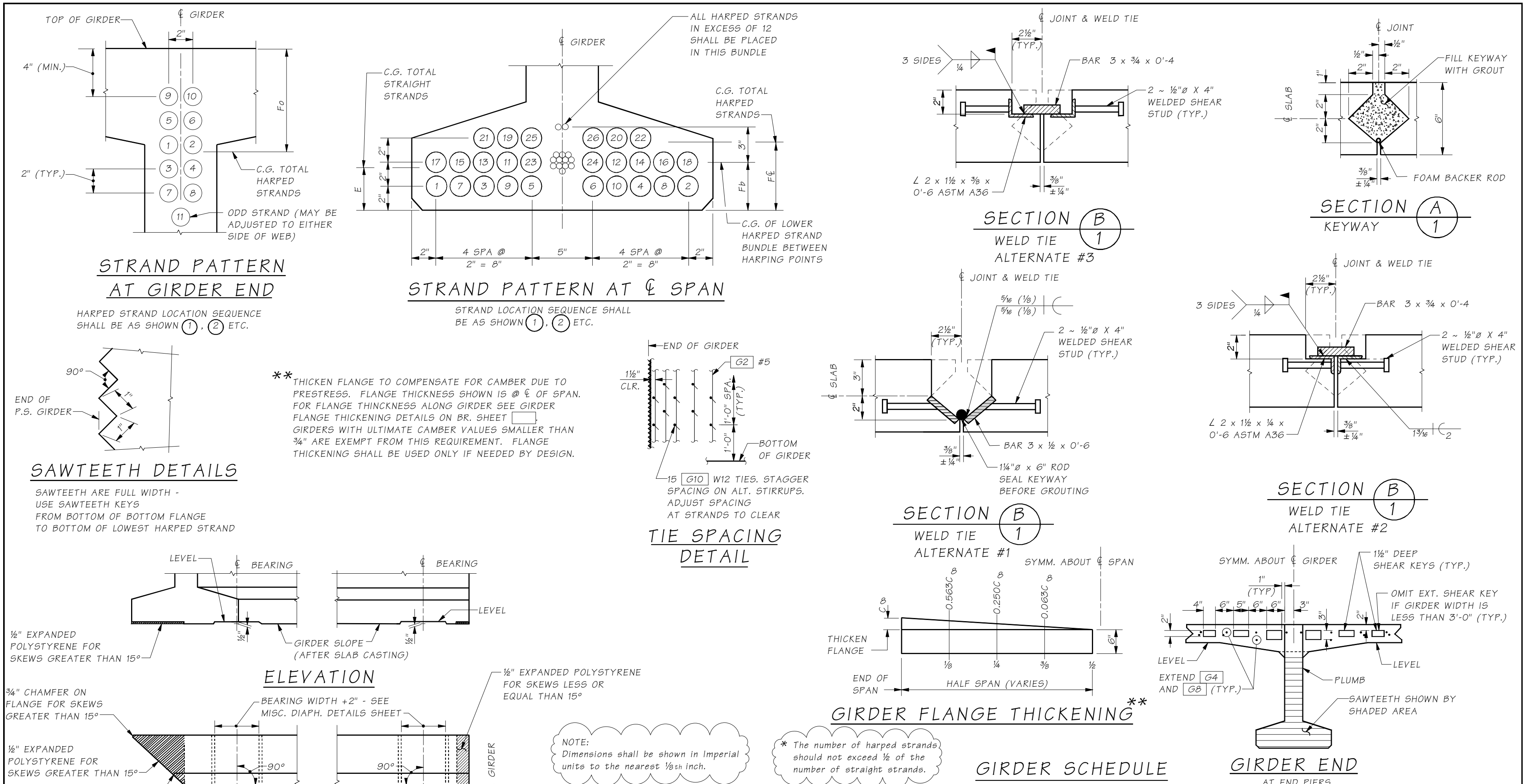
Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W41DG DECK BULB TEE GIRDER DETAILS 1 OF 2

BRIDGE SHEET NO.

SHEET OF SHEETS



GIRDER SCHEDULE

SPAN	GIRDER	END 1	END 2	S	LS	θ_1	θ_2	P_1	P_2	PLAN LENGTH (ALONG GIRDER GRADE)	MIN. CONC. COMPR. STRENGTH @ FINAL F'C KSI	MIN. CONC. COMPR. STRENGTH @ RELEASE F'CI KSI	HARPED NO. OF STRANDS	HARPED JACKING FORCE (KIPS)	STRAIGHT NO. OF STRANDS	STRAIGHT JACKING FORCE (KIPS)	LOCATION OF C.G. STRANDS E	F℄	Fb	Fo	CAMBER RELEASE ◁	30 ◁	2000 ◁
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W41DG2.man			
Supervisor		REGION NO. 10	STATE WASH.	FED. AID PROJ. NO.
Designed By		JOB NUMBER		
Checked By				
Detailed By				
Bridge Projects Engr.				
Prelim. Plan By				
Architect/Specialist	DATE	REVISION	BY	APP'D

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Washington State Department of Transportation

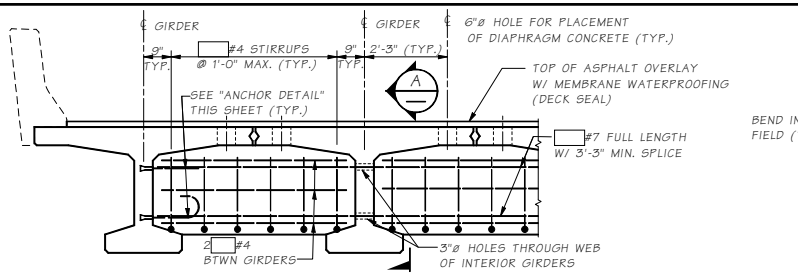
STANDARD PRESTRESSED CONCRETE GIRDERS

W41DG DECK BULB TEE GIRDER DETAILS 2 OF 2

BRIDGE SHEET NO. / SHEET OF SHEETS

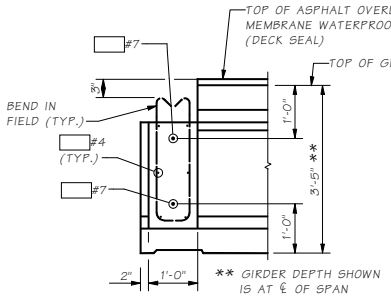
Tue Feb 05 09:08:55 2008

SR / JOB NO. / SHEET



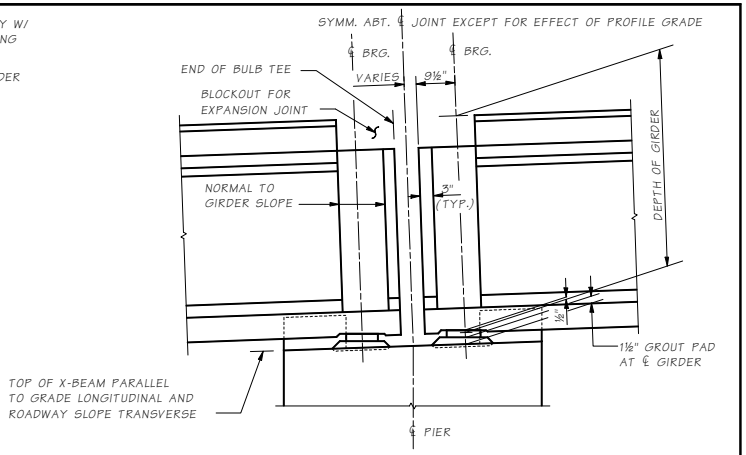
ELEVATION - TYPICAL END DIAPHRAGM AT INTERMEDIATE PIERS

CONCRETE CLASS 4000, CAST IN PLACE



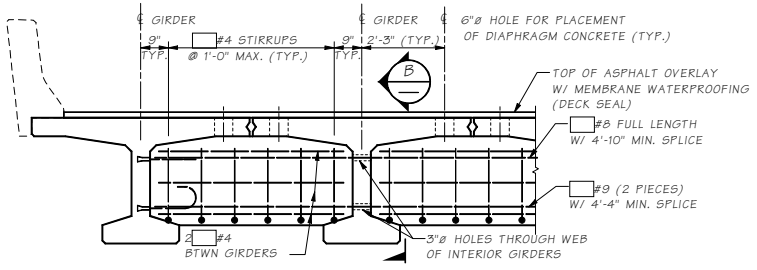
SECTION A

LONGIT. DIMENSIONS ARE NORMAL TO SKEW



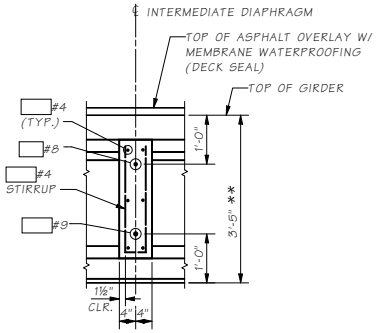
END DIAPHRAGMS AT INTERMEDIATE PIER

LONGITUDINAL DIMENSIONS ARE NORMAL TO PIER

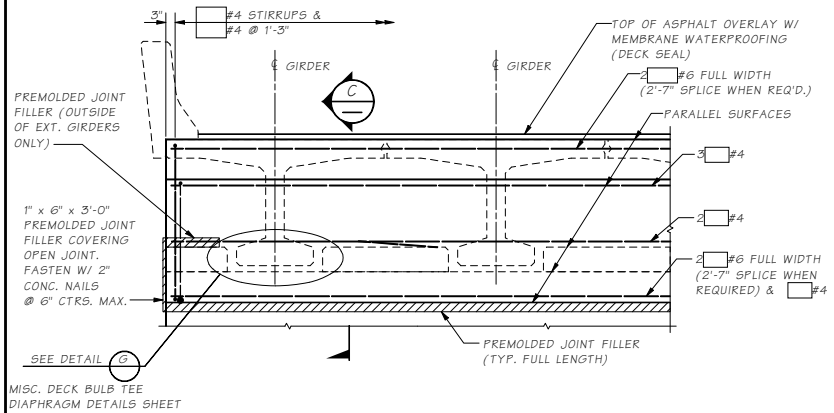


ELEVATION - TYPICAL INTERMEDIATE DIAPHRAGM

CONCRETE CLASS 4000, CAST IN PLACE



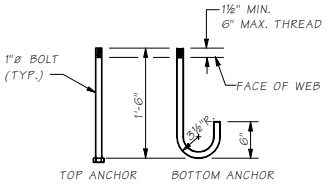
SECTION B



MISC. DECK BULB TEE DIAPHRAGM DETAILS SHEET

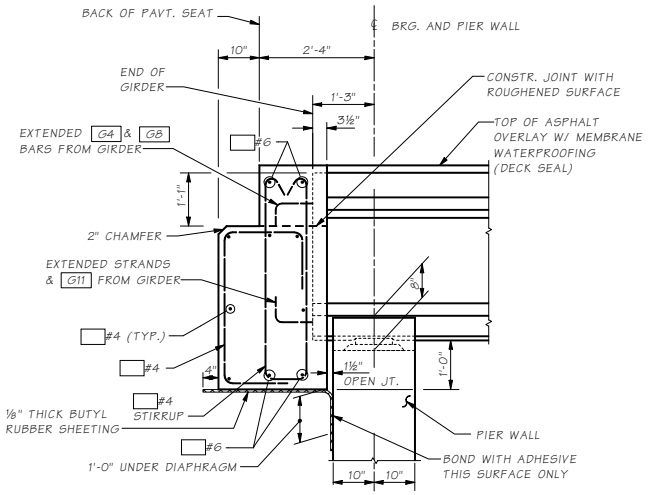
ELEVATION - TYPICAL END DIAPHRAGM AT END PIERS

CONCRETE CLASS 4000, CAST IN PLACE



ANCHOR DETAIL

A.S.T.M. A-307



SECTION C

ALL LONGITUDINAL DIMENSIONS SHOWN ARE NORMAL TO ℄ BRG.

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W41DG_DIAPHRAGMS.man									
Supervisor						REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By						10	WASH.			
Checked By						JOB NUMBER				
Detailed By										
Bridge Projects Engr.										
Prelim Plan By										
Architect/Specialist	DATE	REVISION		BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

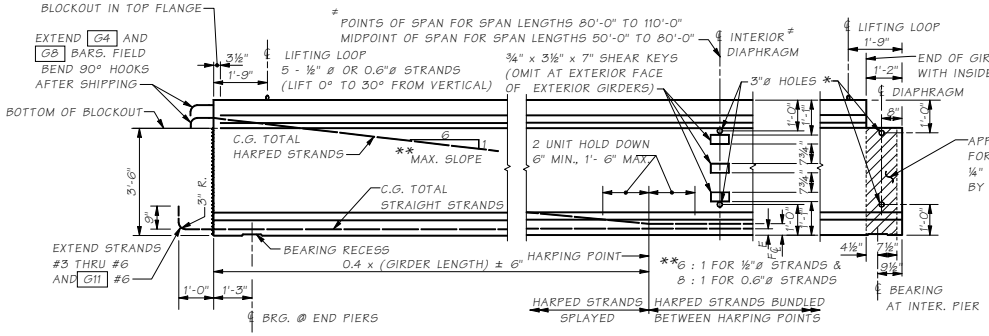
STANDARD PRESTRESSED CONCRETE GIRDERS

W41DG DECK BULB TEE GIRDER DIAPHRAGM DETAILS

BRIDGE SHEET NO. SHEET OF SHEETS

SHEET JOB NO. SR 5.6-A25-3

Tue Feb 05 09:09:03 2008

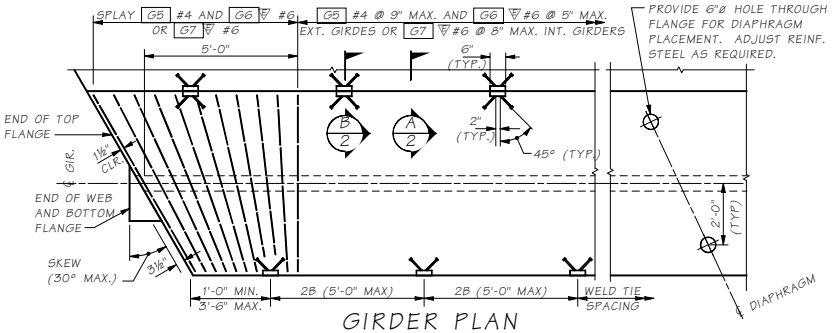


GIRDER ELEVATION

* OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1" BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4⅝") FERRULE INSERT OR APPROVED EQUAL. (TYP.)

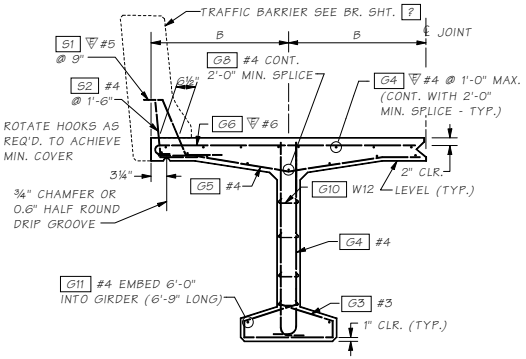
GENERAL NOTES

1. ALL DETAILS SHOWN PERTAIN ONLY TO THE 53 INCH DEEP GIRDER WITH THE 6'-0" GIRDER WIDTH SHOWN.
2. FORMS FOR THE BEARING PAD RECESSES SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER SO AS TO NOT CAUSE DAMAGE TO THE GIRDERS DURING THE STRAND RELEASE OPERATION.
3. SPAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE
4. ALL PRESTRESSING STRANDS SHALL BE ½ INCH OR 0.6 INCH ø LOW RELAXATION SEVEN WIRE STRAND, AASHTO M203 GR. 270. ALL MILD STEEL REINFORCING SHALL BE AASHTO M31 GR. 60. ALL STUDS SHALL CONFORM TO STD. SPEC. SECTION 9-06.15. ALL OTHER STEEL SHALL BE AASHTO M183 AND SHALL BE PAINTED WITH 2 COATS OF STATE FORMULA A-9-73.
5. CUT ALL STRANDS FLUSH WITH THE GIRDER ENDS EXCEPT FOR THOSE SHOWN TO BE EXTENDED, AND PAINT ENDS OF FLUSH STRANDS WITH AN APPROVED EPOXY RESIN.
6. AFTER ERECTION, CUT OFF LIFTING LOOPS 1 INCH BELOW THE TOP OF THE FLANGE AND FILL WITH AN APPROVED GROUT PRIOR TO PLACING OF THE OVERLAY. ALL LIFTING STRANDS ARE TO BE OF THE SAME MATERIAL AND STRENGTH AS THE PRESTRESSING STRANDS. WRAP LIFTING LOOPS SO THAT EACH STRAND WILL CARRY IT'S SHARE OF THE TOTAL LOAD. EXTEND LIFTING LOOPS WITH 9 INCH LONG 90° HOOKS TO WITHIN 3 INCHES CLEAR OF THE BOTTOM OF THE GIRDER.



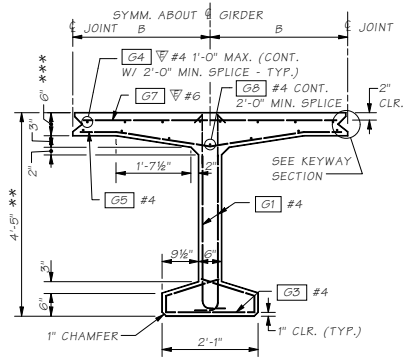
GIRDER PLAN

OMIT WELD TIES ON EXTERIOR EDGE OF EXTERIOR GIRDER. (STRANDS AND LONGITUDINAL BARS NOT SHOWN)



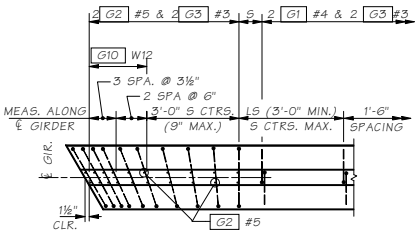
EXTERIOR GIRDER REINFORCING NEAR GIRDER END

FOR DETAILS NOT SHOWN, SEE INTERIOR GIRDER



INTERIOR GIRDER REINFORCING NEAR MIDSPAN

*** THICKEN FLANGE TO COMPENSATE FOR SUPERELEVATION.



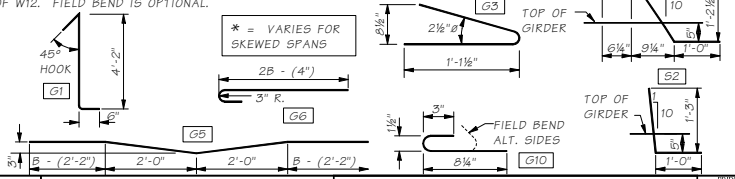
PLAN SECTION THROUGH GIRDER WEB

MARK	LOCATION	SIZE
G1	GIRDER STIRRUPS	4
G2	GIRDER END STIRRUPS	5
G3	BOTTOM FLANGE	3
G4	TOP OF TOP FLANGE - LONGIT.	▽4 STR.
G5	BOT. OF TOP FLANGE - TRANSV.	4
G6	TOP TRANSV. - EXT. GIRDER	▽6
G7	TOP TRANSV. - INT. GIRDER	▽6 STR.
G8	BOT. OF TOP FLANGE - LONGIT.	4 STR.
G10	GIRDER END TIES	W12 △△
G11	GIRDER LONGIT.	6 STR.
S1	T.B. TO DECK TIE	▽5
S2	T.B. TO DECK TIE	4

BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)

△△ #3 OR #4 BARS MAY BE USED IN LIEU OF W12. FIELD BEND IS OPTIONAL.

▽ DENOTES EPOXY COATED



Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W53DG1.man				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By					JOB NUMBER				
Checked By									
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W53DG DECK BULB TEE GIRDER DETAILS 1 OF 2

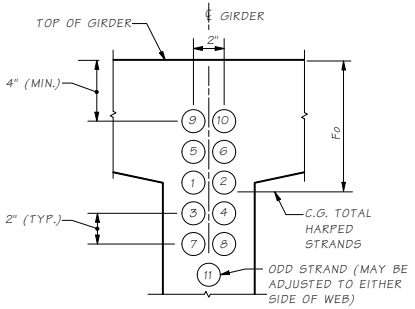
BRIDGE SHEET NO.

SHEET OF SHEETS

JOB NO. SHEET

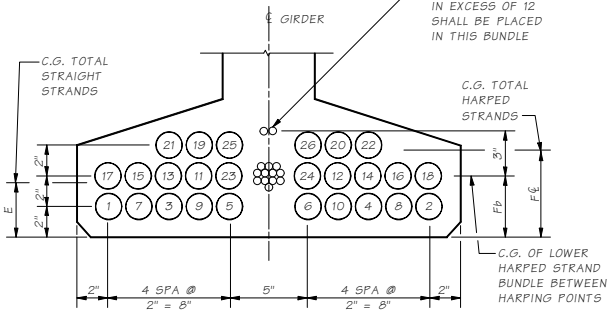
5.6-A26-1 SR

Tue Feb 05 09:09:09 2008



STRAND PATTERN AT GIRDER END

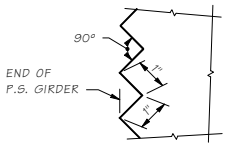
HARPED STRAND LOCATION SEQUENCE SHALL BE AS SHOWN (1), (2) ETC.



STRAND PATTERN AT ℄ SPAN

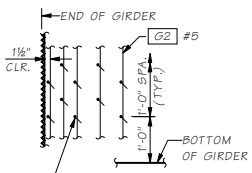
STRAND LOCATION SEQUENCE SHALL BE AS SHOWN (1), (2) ETC.

** THICKEN FLANGE TO COMPENSATE FOR CAMBER DUE TO PRESTRESS. FLANGE THICKNESS SHOWN IS @ ℄ OF SPAN. FOR FLANGE THICKNESS ALONG GIRDER SEE GIRDER FLANGE THICKENING DETAILS ON BR. SHEET ☐ GIRDERS WITH ULTIMATE CAMBER VALUES SMALLER THAN ¾" ARE EXEMPT FROM THIS REQUIREMENT. FLANGE THICKENING SHALL BE USED ONLY IF NEEDED BY DESIGN.

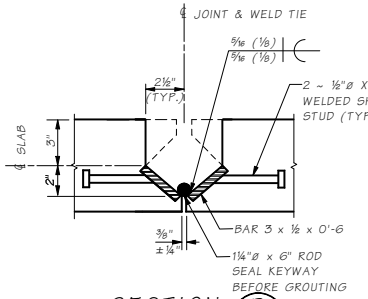


SAWTEETH DETAILS

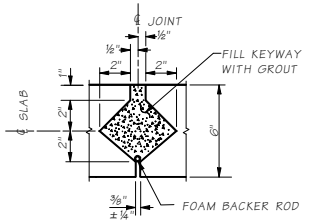
SAWTEETH ARE FULL WIDTH - USE SAWTEETH KEYS FROM BOTTOM OF BOTTOM FLANGE TO BOTTOM OF LOWEST HARPED STRAND



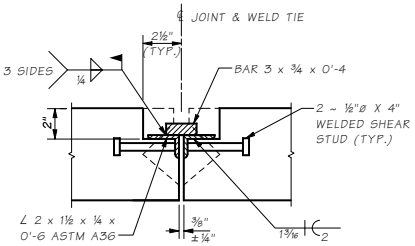
TIE SPACING DETAIL



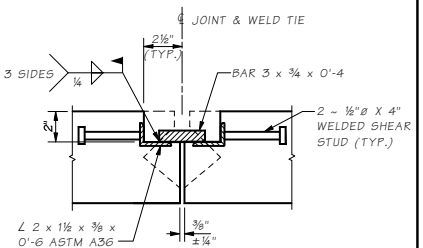
SECTION B 1
WELD TIE ALTERNATE #1



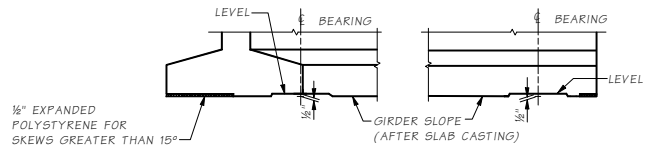
SECTION A 1
KEYWAY



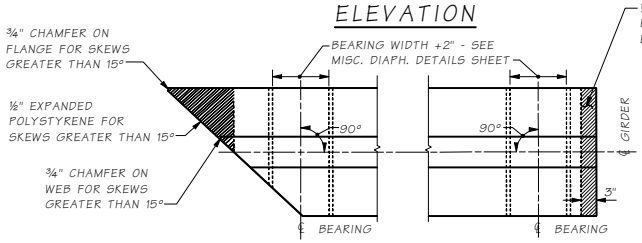
SECTION B 1
WELD TIE ALTERNATE #2



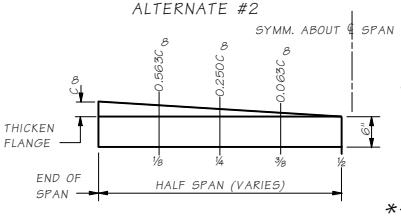
SECTION B 1
WELD TIE ALTERNATE #3



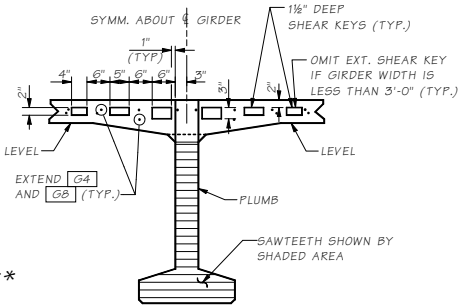
ELEVATION



PLAN - BEARING RECESS & BOTTOM FLANGE SPALL PROTECTION



GIRDER FLANGE THICKENING**



GIRDER END
AT END PIERS

NOTE: Dimensions shall be shown in imperial units to the nearest 1/8th inch.

* The number of harped strands should not exceed ½ of the number of straight strands.

GIRDER SCHEDULE

SPAN	GIRDER	END 1	END 2	S	LS	θ_1	θ_2	P_1	P_2	PLAN LENGTH (ALONG GIRDER GRADE)	MIN. CONC. COMPR. STRENGTH @ FINAL F'C KSI	MIN. CONC. COMPR. STRENGTH @ RELEASE F'CI KSI	HARPED NO. OF STRANDS	HARPED JACKING FORCE (KIPS)	STRAIGHT NO. OF STRANDS	STRAIGHT JACKING FORCE (KIPS)	LOCATION OF C.G. STRANDS E	LOCATION OF C.G. STRANDS F℄	LOCATION OF C.G. STRANDS Fb	LOCATION OF C.G. STRANDS Fo	CAMBER (IN) RELEASE △	CAMBER (IN) 30 △	CAMBER (IN) 2000 △
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W53DG2.man								
Supervisor						REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By						10	WASH.			
Checked By						JOB NUMBER				
Detailed By										
Bridge Projects Engr.										
Prelim Plan By										
Architect/Specialist	DATE	REVISION		BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W53DG DECK BULB TEE GIRDER DETAILS 2 OF 2

BRIDGE SHEET NO.

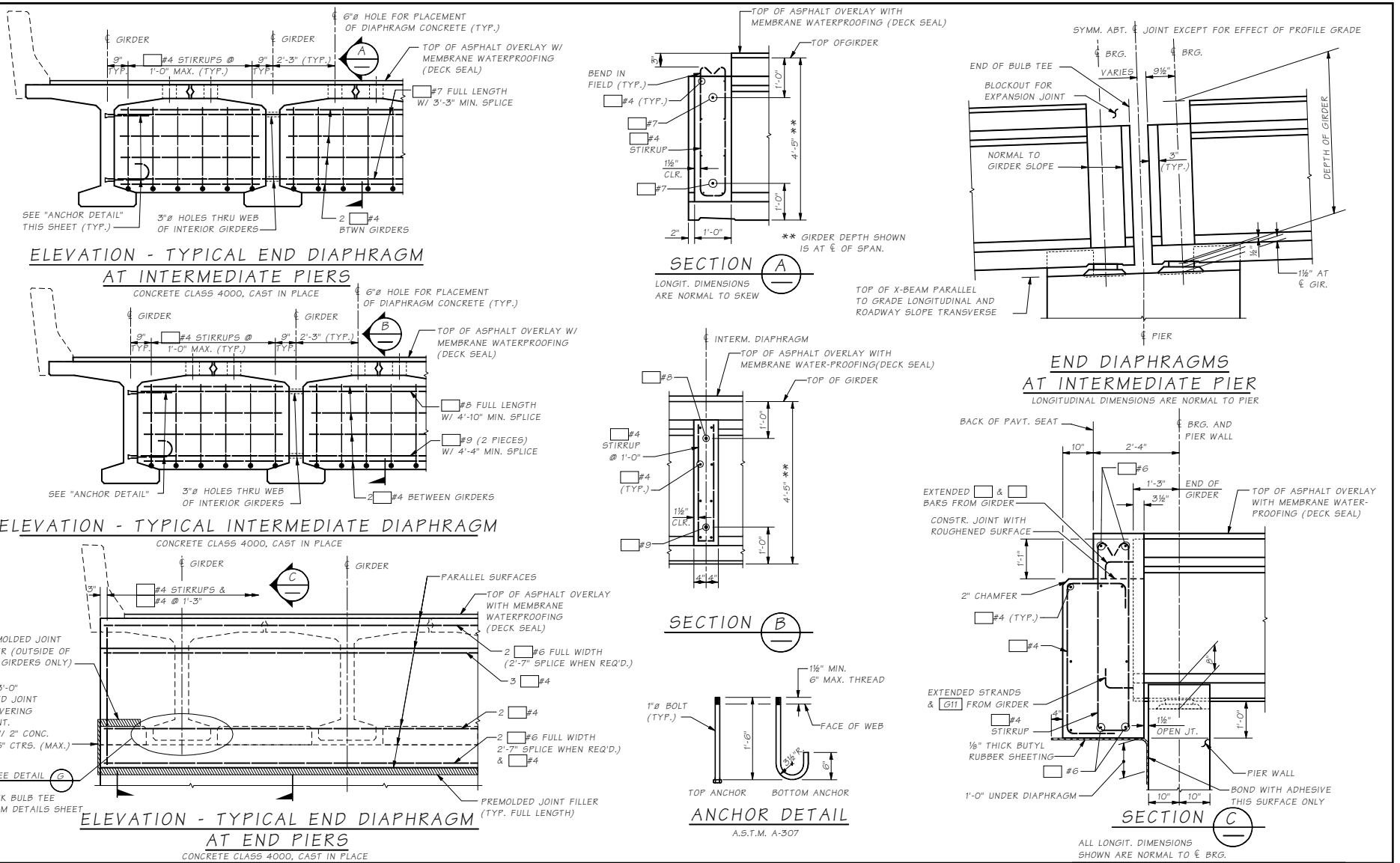
SHEET OF SHEETS

SHEET

JOB NO. SR

5.6-A26-2

Tue Feb 05 09:09:17 2008



Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W53DG DIAPHRAGMS.man				REVISION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By					JOB NUMBER				
Checked By									
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W53DG DECK BULB TEE DIAPHRAGM DETAILS

BRIDGE SHEET NO.

SHEET OF SHEETS

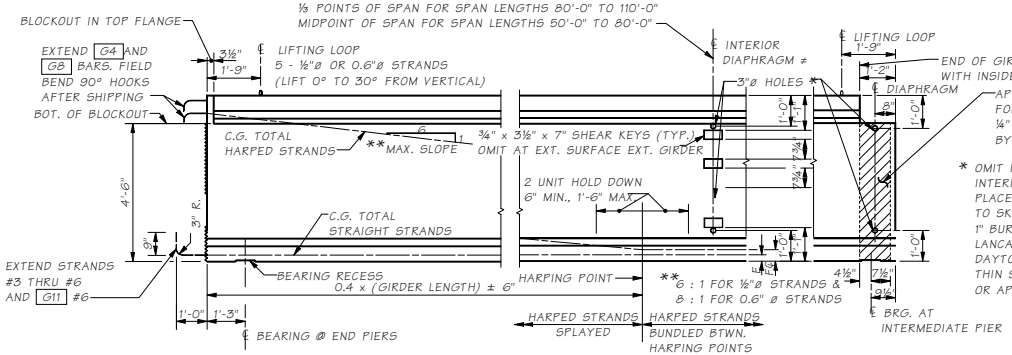
SHEET

JOB NO.

SR

5.6-A26-3

Tue Feb 05 09:09:29 2008

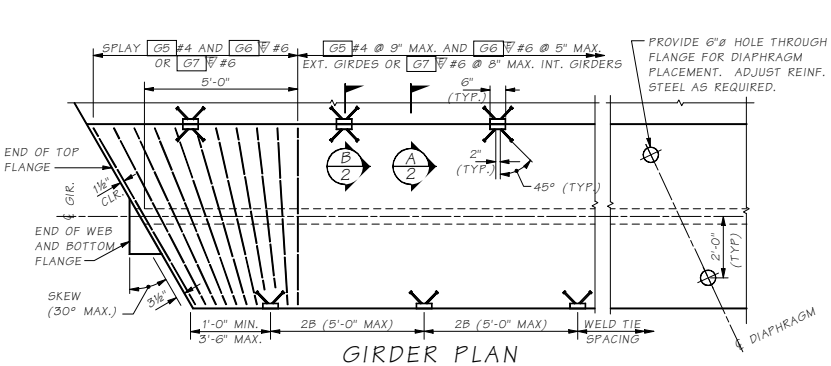


GIRDER ELEVATION

* OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1" BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4⅝") FERRULE INSERT OR APPROVED EQUAL. (TYP.)

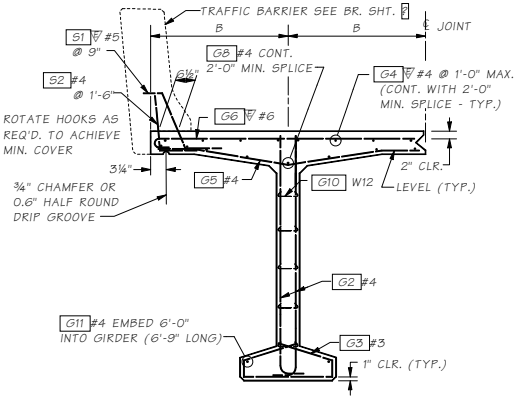
GENERAL NOTES

1. ALL DETAILS SHOWN PERTAIN ONLY TO THE 65 INCH DEEP GIRDER WITH THE 6'-0" GIRDER WIDTH SHOWN.
2. FORMS FOR THE BEARING PAD RECESSES SHALL BE CONSTRUCTED AND FASTENED IN SUCH A MANNER SO AS TO NOT CAUSE DAMAGE TO THE GIRDERS DURING THE STRAND RELEASE OPERATION.
3. SPAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE
4. ALL PRESTRESSING STRANDS SHALL BE ½ INCH OR 0.6 INCH ø LOW RELAXATION SEVEN WIRE STRAND, AASHTO M203 GR. 270. ALL MILD STEEL REINFORCING SHALL BE AASHTO M31 GR. 60. ALL STUDS SHALL CONFORM TO STD. SPEC. SECTION 9-06.15. ALL OTHER STEEL SHALL BE AASHTO M183 AND SHALL BE PAINTED WITH 2 COATS OF STATE FORMULA A-9-73.
5. CUT ALL STRANDS FLUSH WITH THE GIRDER ENDS EXCEPT FOR THOSE SHOWN TO BE EXTENDED, AND PAINT ENDS OF FLUSH STRANDS WITH AN APPROVED EPOXY RESIN.
6. AFTER ERECTION, CUT OFF LIFTING LOOPS 1 INCH BELOW THE TOP OF THE FLANGE AND FILL WITH AN APPROVED GROUT PRIOR TO PLACING OF THE OVERLAY. ALL LIFTING STRANDS ARE TO BE OF THE SAME MATERIAL AND STRENGTH AS THE PRESTRESSING STRANDS. WRAP LIFTING LOOPS SO THAT EACH STRAND WILL CARRY IT'S SHARE OF THE TOTAL LOAD. EXTEND LIFTING LOOPS WITH 9 INCH LONG 90° HOOKS TO WITHIN 3 INCHES CLEAR OF THE BOTTOM OF THE GIRDER.



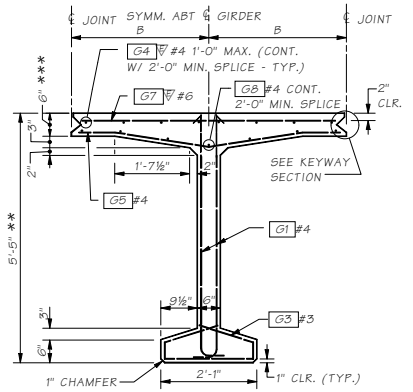
GIRDER PLAN

OMIT WELD TIES ON EXTERIOR EDGE OF EXTERIOR GIRDER. (STRANDS AND LONGITUDINAL BARS NOT SHOWN)



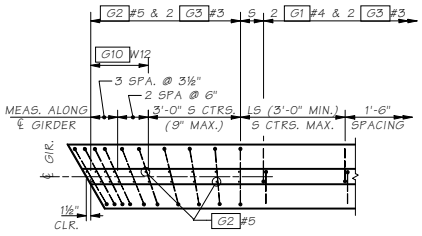
EXTERIOR GIRDER REINFORCING NEAR GIRDER END

FOR DETAILS NOT SHOWN, SEE INTERIOR GIRDER



INTERIOR GIRDER REINFORCING NEAR MIDSPAN

*** THICKEN FLANGE TO COMPENSATE FOR SUPERELEVATION



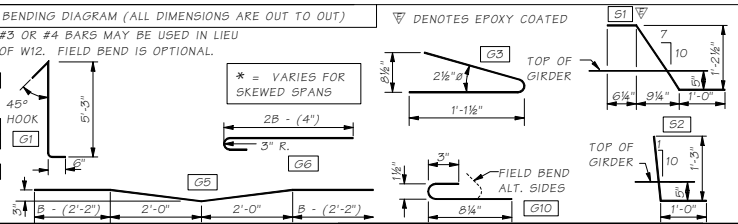
PLAN SECTION THROUGH GIRDER WEB

MARK	LOCATION	SIZE
G1	GIRDER STIRRUPS	4
G2	GIRDER END STIRRUPS	5
G3	BOTTOM FLANGE	3
G4	TOP OF TOP FLANGE - LONGIT.	▽4 STR.
G5	BOT. OF TOP FLANGE - TRANSV.	4
G6	TOP TRANSV. - EXT. GIRDER	▽6
G7	TOP TRANSV. - INT. GIRDER	▽6 STR.
G8	BOT. OF TOP FLANGE - LONGIT.	4 STR.
G10	GIRDER END TIES	W12 △△
G11	GIRDER LONGIT.	6 STR.
S1	T.B. TO DECK TIE	▽5
S2	T.B. TO DECK TIE	4

BENDING DIAGRAM (ALL DIMENSIONS ARE OUT TO OUT)

△△ #3 OR #4 BARS MAY BE USED IN LIEU OF W12. FIELD BEND IS OPTIONAL.

▽ DENOTES EPOXY COATED



Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W65DG1.man				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By					JOB NUMBER				
Checked By									
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W65DG DECK BULB TEE GIRDER DETAILS 1 OF 2

BRIDGE SHEET NO.

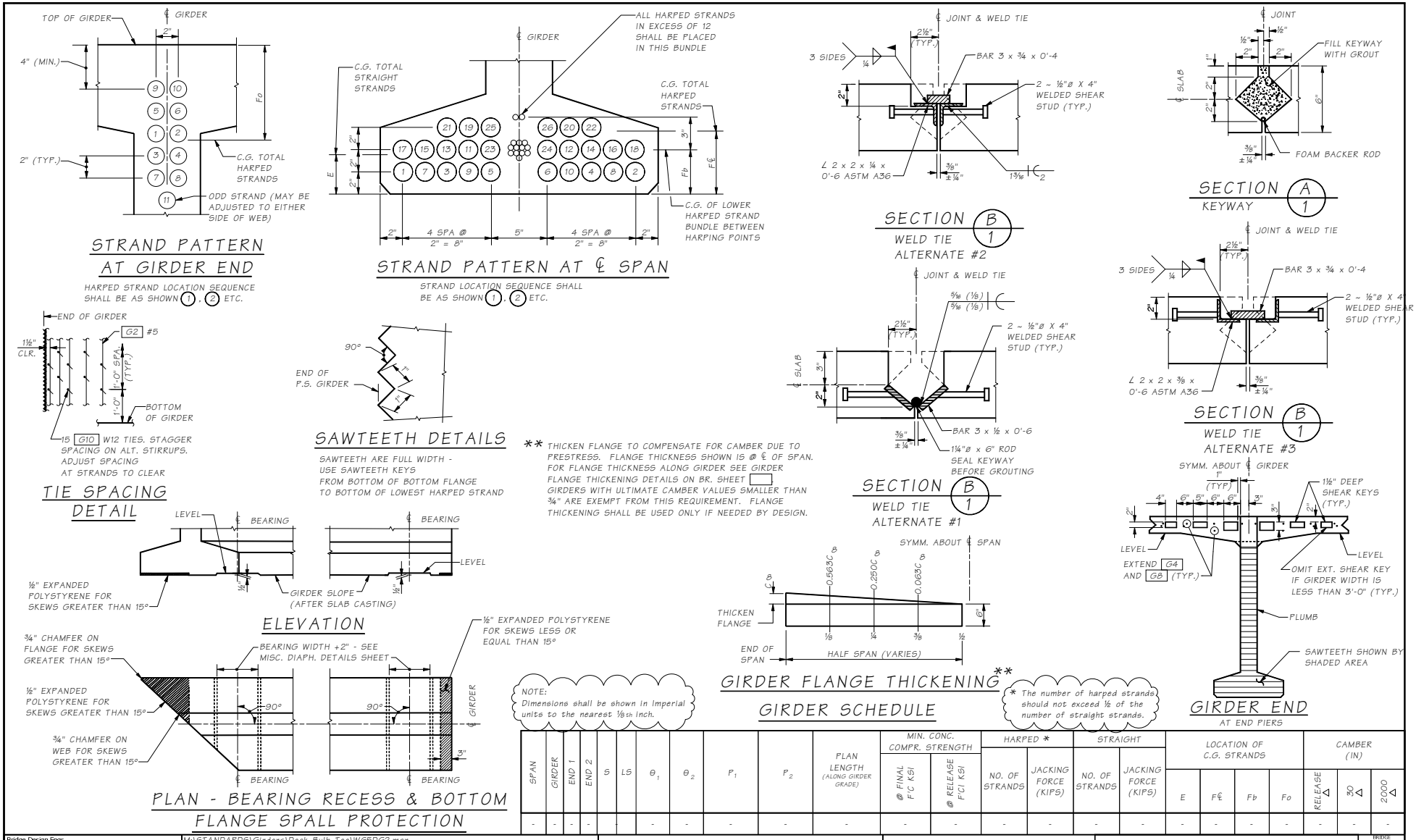
SHEET OF SHEETS

SHEET

JOB NO.

SR 5.6-A27-1

Tue Feb 05 09:09:41 2008



SPAN	GIRDER	END 1	END 2	S	LS	θ1	θ2	P1	P2	PLAN LENGTH (ALONG GIRDER GRADE)	MIN. CONC. COMPR. STRENGTH @ FINAL F'C KSI	MIN. CONC. COMPR. STRENGTH @ RELEASE F'CI KSI	HARPED * NO. OF STRANDS	HARPED * JACKING FORCE (KIPS)	STRAIGHT NO. OF STRANDS	STRAIGHT JACKING FORCE (KIPS)	LOCATION OF C.G. STRANDS E	LOCATION OF C.G. STRANDS F℄	LOCATION OF C.G. STRANDS Fb	LOCATION OF C.G. STRANDS Fo	CAMBER (IN) RELEASE △	CAMBER (IN) 30 △	CAMBER (IN) 2000 △
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W65DG2.man							
Supervisor								
Designed By								
Checked By								
Detailed By								
Bridge Projects Engr.								
Prelim Plan By								
Architect/Specialist	DATE	REVISION	BY	APP'D				

Tue Feb 05 08:08:53 2008

REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10	WASH.			
JOB NUMBER				

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

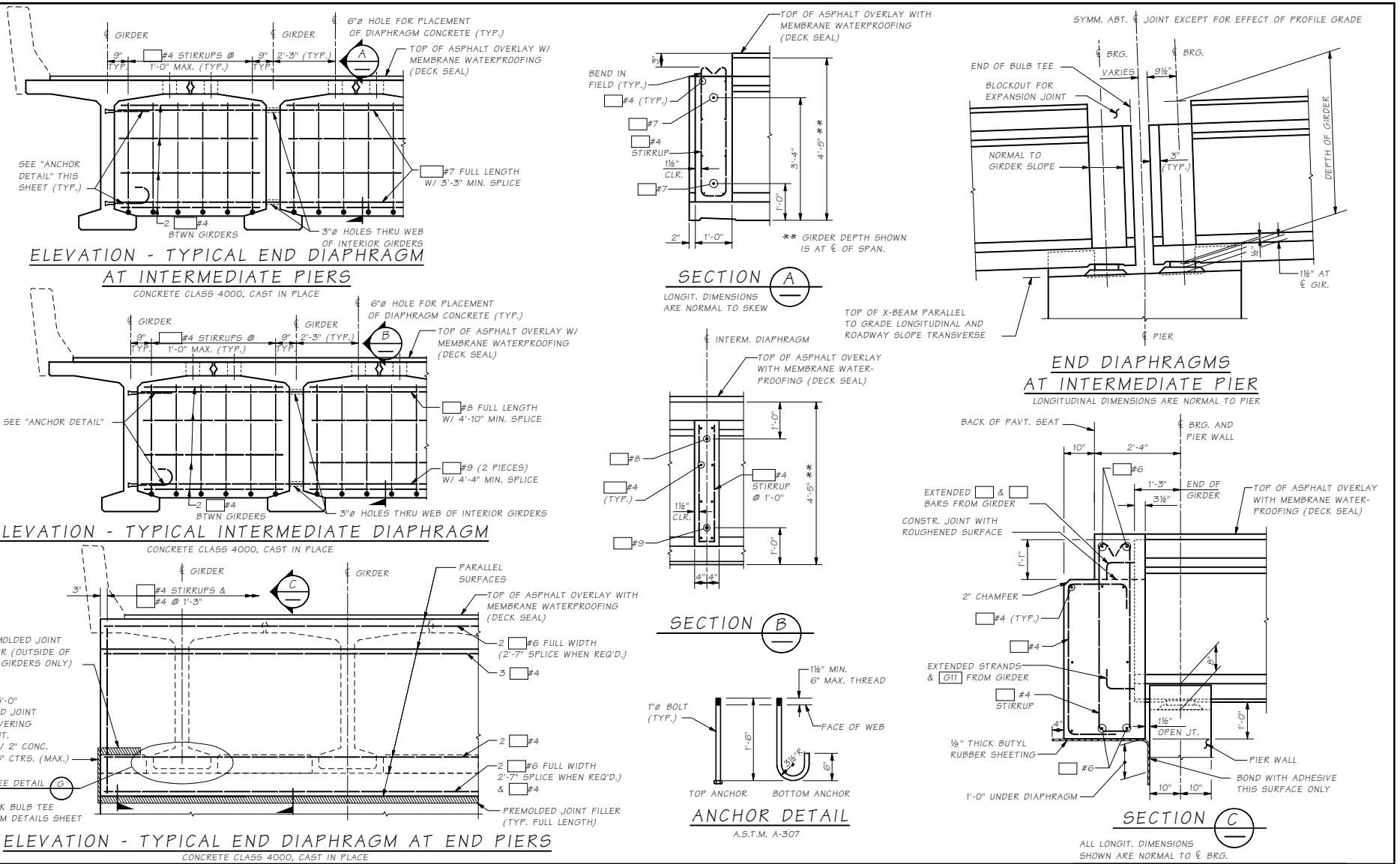
STANDARD PRESTRESSED CONCRETE GIRDERS

W65DG DECK BULB TEE GIRDER DETAILS 2 OF 2

BRIDGE SHEET NO. ____ SHEET ____ OF ____ SHEETS

JOB NO. ____ SHEET ____ SR

5.6-A27-2



Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\W65DG DIAPHRAGMS.man				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By					JOB NUMBER				
Checked By									
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

W65DG DECK BULB TEE GIRDER DIAPHRAGM DETAILS

BRIDGE SHEET NO.

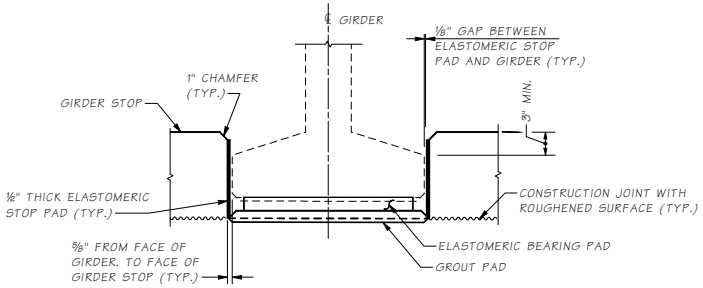
SHEET OF SHEETS

SHEET

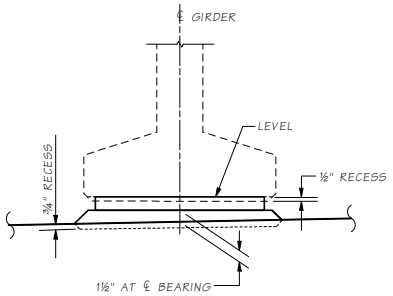
JOB NO.

SR 5.6-A27-3

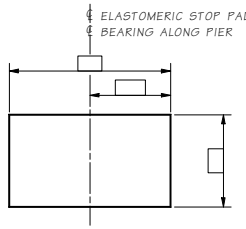
Tue Feb 05 09:10:05 2008



SECTION G



GROUT PAD ELEVATION

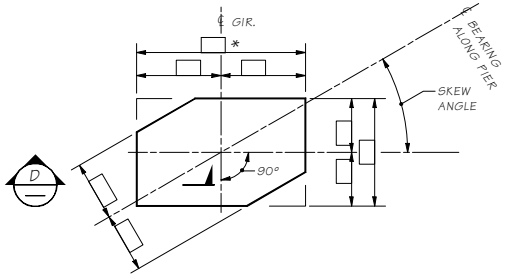


ELASTOMERIC STOP PAD

DUROMETER HARDNESS = 60

NOTE:

1. GIRDER STOPS SHALL BE CONSTRUCTED AFTER GIRDER PLACEMENT.
2. THE ELASTOMERIC STOP PADS SHALL BE CEMENTED TO GIRDER STOPS WITH APPROVED ADHESIVE.

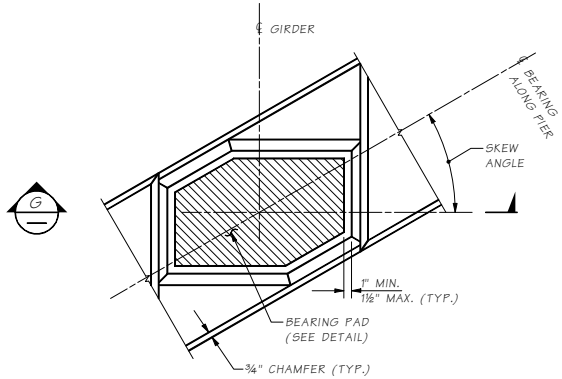


BEARING PAD

LAMINATED ELASTOMERIC BRIDGE PAD ☐ THICK (☐ SHIMS)

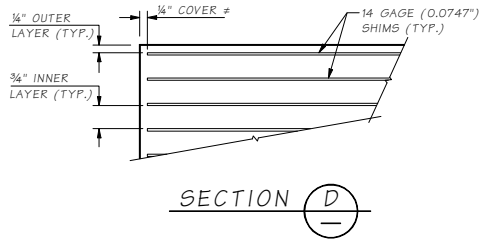
Skew angle shown at 30°.

* The edge of the bearing pad shall be set at 1" from the edge of the bottom flange.



GROUT PAD DETAIL

Skew angle shown at 30°.



SECTION D

≠ ⅛" for pad thickness ≤ 3"
¼" for 3" < pad thickness ≤ 7"
½" for pad thickness > 7"

BEARING DESIGN TABLE	
SERVICE - I LIMIT STATE	
DEAD LOAD REACTION	KIPS
LIVE LOAD REACTION (W/O IMPACT)	KIPS
UNLOADED HEIGHT	IN.
LOADED HEIGHT (DL)	IN.
DUROMETER HARDNESS	60

Bridge Design Engr.	M:\STANDARDS\Girders\Deck Bulb Tee\DECK BULB TEE MISC DIAPH DETAIL.MAN				REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor					10	WASH.			
Designed By									
Checked By					JOB NUMBER				
Detailed By									
Bridge Projects Engr.									
Prelim Plan By									
Architect/Specialist	DATE	REVISION	BY	APP'D					

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

STANDARD PRESTRESSED CONCRETE GIRDERS

DECK BULB TEE GIRDER DIAPHRAGM DETAILS

BRIDGE SHEET NO.

SHEET OF SHEETS

SR JOB NO. SHEET

5.6-A27-4

Tue Feb 05 09:10:16 2008